REMARKS

Summary of Amendments

1. Claims 1 through 10 were originally presented in this application. No claims were added or canceled in any previous paper. Claims 11-18 have been added in this paper. No claims have been amended or canceled. Accordingly, claims 1 through 18 are pending.

Claim Rejections - 35 U.S.C. § 102

2. Claims 1, 2, 4, 6, 7 and 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Harada et al.* (WO 0154188). In particular, the Examiner states: "Harada et al. disclose an electrostatic chuck with porous metallic sprayed electrode of tungsten with a porosity of 1-7%. (See col. 3, lines 26-46; col. 6, lines 15-25; and col. 10, lines 40-47 in US 6771483—an English equivalent.)"

3. Applicants respectfully traverse this rejection. As previously presented, independent claim 1 recites a "wafer holder having a surface for carrying wafers and comprising a layer of electrical circuitry composed of one or more sinter laminae" (emphasis added). On the contrary, *Harada et al.* disclose a plasma sprayed tungsten electrode (column 6, lines 17-18). Applicants respectfully submit that the sinter laminae recited in claim 1 is structurally distinct from the plasma sprayed electrode disclosed in *Harada et al*. Such structural differences would be readily recognized by any artisan of ordinary skill in the art. MSN Encarta defines a sinter as "a mass of metal particles bonded and partly fused by the use of pressure and heat below the melting point" (http://encarta.msn.com/dictionary_/sinter.html). Note that the sinter includes a mass of particles (in the present invention this mass is a mixture of oxide and metal powders) that are partially fused together. Since the bonding takes place at a temperature less than the melting temperature, the fusing of the powders is incomplete and the sinter retains some of its powder-like structure.

4. *Harada et al*., on the other hand, discloses a plasma-sprayed tungsten electrode. It is well known in the art that such plasma-spray operations are carried out at temperature well above the melting point of the metal (plasma temperatures as high as 12,000 to 16,000 degrees Kelvin, which are well above both the melting *and boiling points* of tungsten, are reported in the following Air Products technical literature: http://www.airproducts.com/Products/CylinderGases/MAXX/ThermalSpraying/thermalspraying_techpaper.htm). Moreover, in such plasma processes, the metal is fully atomized (i.e., metal wire or powders are atomized into a plasma in an arc or jet flame). The resulting metal layer is fully fused and retains none of its powder structure. Therefore, Applicants submit that the porous sinter laminae recited in

claim 1 is patentably distinct over the plasma sprayed tungsten electrode disclosed in *Harada et al*. Accordingly, Applicants respectfully request the Examiner to withdraw this rejection.

Claim Rejections - 35 U.S.C. § 103

Claims 1-10; Shamouilian et al. '958 or Niori et al. '246 in view of Heimann et al. '707

5. Claims 1-10 stand rejected under 35 USC 103(a) as being unpatentable over *Shamouilian et al.* (U.S. Pat. No. 6,494,958) in view of *Heimann et al.* (U.S. Pat. No. 6,620,707). Claims 1-10 also stand rejected under 35 USC 103(a) as being unpatentable over *Niori et al.* (U.S. Pat. No. 6,197,246) in view of *Heimann et al*. The Examiner has upheld these rejections despite Applicants' amendments to claim 1, submitted together with an RCE filed April 2, 2006. In his rejection, the Examiner added to his arguments that "it is held that it is obvious to optimize Result-Effective Variables MPEP 2144.05 II B (. . .). It is clear from the teaching of Heimann et al. that the porosity is a result-effective parameter."

6. Applicants respectfully traverse this rejection. Applicants maintain their position that there is nothing in *Shamouilian et al*. or *Niori et al*. that teach or even suggest a porous electrode having a porosity in the recited range from 0.1% to 40%. In particular, both *Shamouilian et al*. and *Niori et al*. teach mesh electrodes. It is well known to those of ordinary skill in the art that such mesh electrodes typically have a porosity that is significantly greater than 40%. A screen is a typical example of a mesh electrode. The porosity of a screen is significantly greater than 50%. Mesh type structures are commonly used for screening operations in which it is desirable to have as high a porosity as possible (much greater than 40%) in order to prevent plugging of the mesh.

7. Regarding Examiner's assertion that porosity is a "result-effective variable," Applicants respectfully disagree. In particular, there is nothing in any of the prior art references of record (namely *Shamouilian et al*., *Niori et al*., or *Heimann et al*.) that recognizes that the porosity of the sinter laminae effects the difference between the out-of-plane displacement of the center of the wafer holder as compared with the periphery of the wafer holder (see Embodiments 1, 2, and 3). In one exemplary embodiment, the composition and porosity of the sinter heater element is predetermined so that the-out-of-plane displacement between the center and periphery of the wafer-carrying surface does not exceed 100 μm when the wafer holder is heated to 700°C. Accordingly, Applicants submit that porosity cannot be a result-effective variable as defined in MPEP 2144.05 II B, because there is no recognition that out-of-plane displacement differences between various locations on the wafer-holder surface are affected by the porosity of the heater element. Thus, claims 1-10 must be patentable over both *Shamouilian et al.* and *Niori et al*. in view of *Heimann et al*.

8. New claims 11, 12, and 13 are presented for consideration in this paper. New claims 11, 12, and 13 depend from independent claim 1 and are supported by Embodiments 2 and 3 (Tables II and III) in the original specification, such that no new matter has been added and no new search should be required. New claims 11-13 are believed to be patentable for the same reasons as independent claim 1 as described above. Moreover, new claims 11-13 are believed to be further patentable in that they recite significantly restricted ranges of sinter porosity. In particular, the Applicant submits that there is no way that the mesh electrodes disclosed in *Shamouilian et al.* and *Niori et al.* can be said to anticipate or render obvious a porosity of less than 5 percent (as recited in new claims 11, 12, and 13).

9. New claim 14 is also presented for consideration in this paper. New claim 14 depends from independent claim 1 and is inherent in the original specification, such that no new matter has been added and no new search should be required. New claim 14 recites a structure in which the "pores have an average diameter less than the thickness of the sintered laminae." Such a structure is inherent in a sinter laminae (which as described above is formed by compressing powders at a temperature less than the melting temperature of the powders). Such a structure also clearly distinguishes over *Shamouilian et al*. The holes (which Examiner refers to as pores) in a mesh penetrate through the thickness of the layer. Thus the average pore diameter in a mesh is at least equal to the thickness of the mesh, and typically much greater than the thickness of the mesh. Accordingly, Applicants submit that new claim 14 is patentable over the prior art of record.

10. New claims 15-18 are also presented for consideration in this paper. New claims 15-17 depend from independent claim 1. Claim 18 is independent. Claims 15, 16, and 18 are supported by Embodiments 1 and 2 (paragraphs [0068]-[0081] of the original specification). New claim 17 is supported by paragraphs [0038]-[0040] of the original specification. No new matter has been added and no new search should be required. New claims 15-18 are believed to be patentable for the same reasons as independent claim 1, as well as for the additional sinter limitations recited therein.

11. For the reasons set forth above, Applicant respectfully submits that independent claims 1 and 18 are patentable over the prior art of record. Independent claim 1 being allowable, it follows *a fortiori* that pending dependent claims 2-17 must also be allowable, since these dependent claims carry with them all the elements of independent claim 1.

Accordingly, Applicants believe that this application in now in full condition for allowance, which action Applicants earnestly solicit.

Respectfully submitted,

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